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Leveraging Innovation and Technology to Avert a Looming Food Crisis in Africa

April 2020

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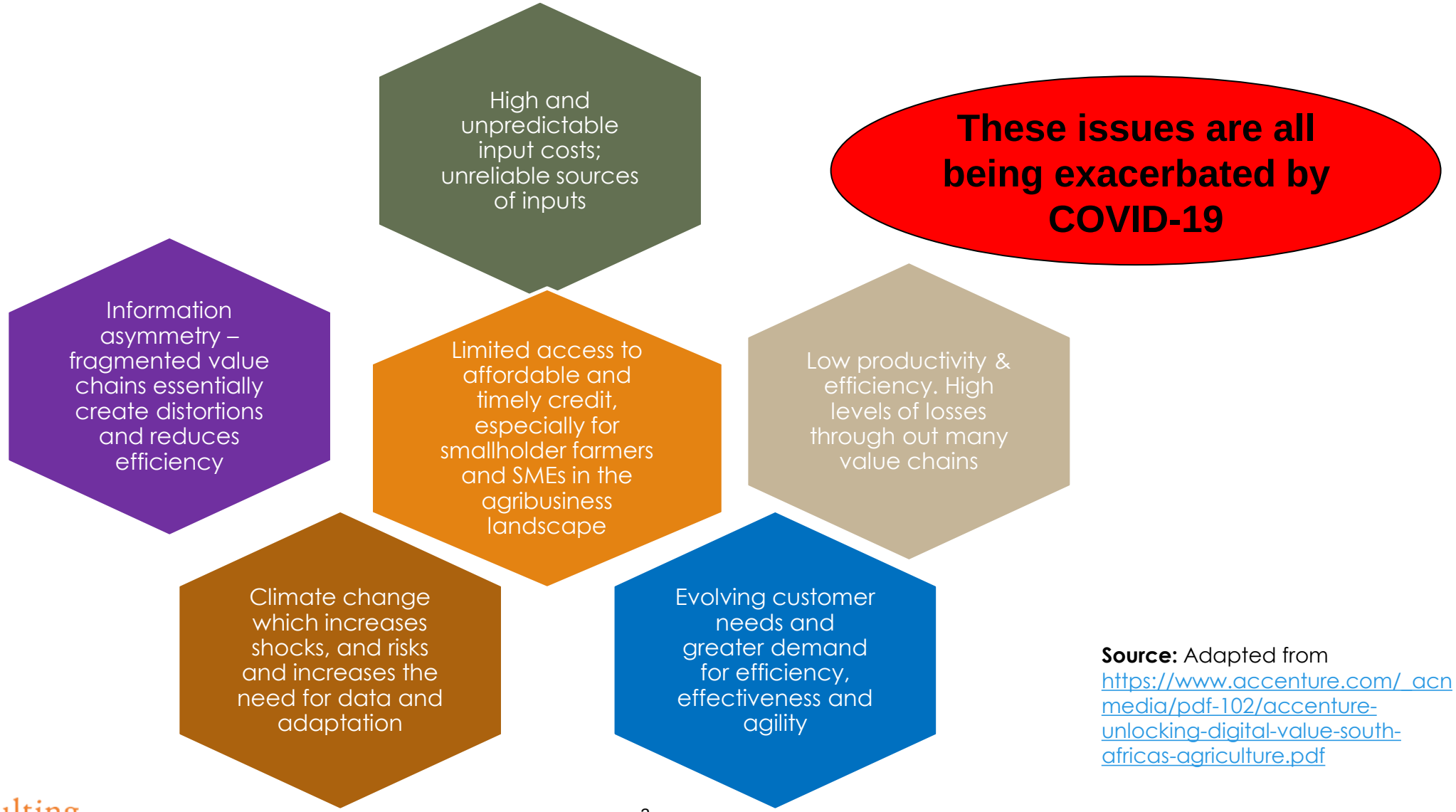
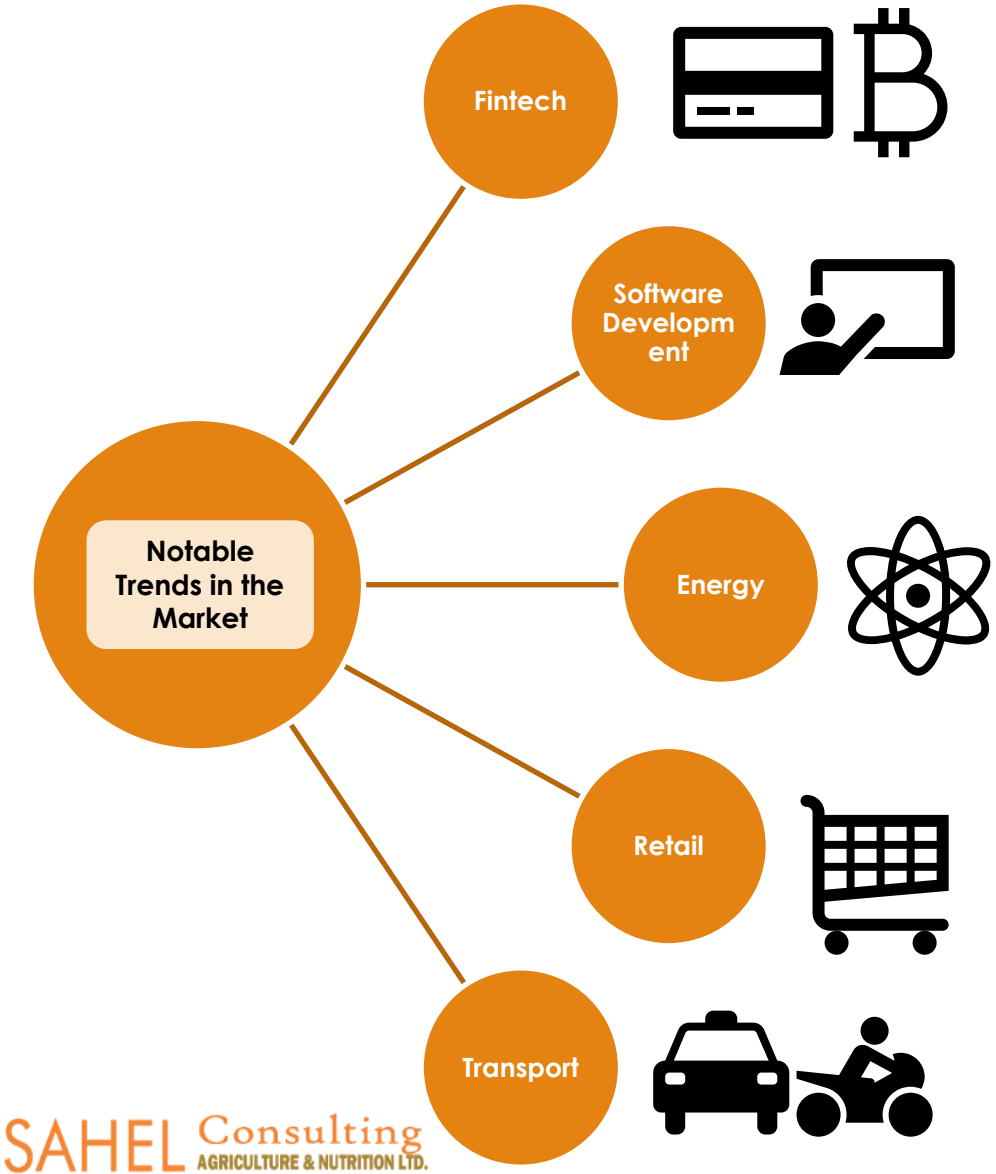
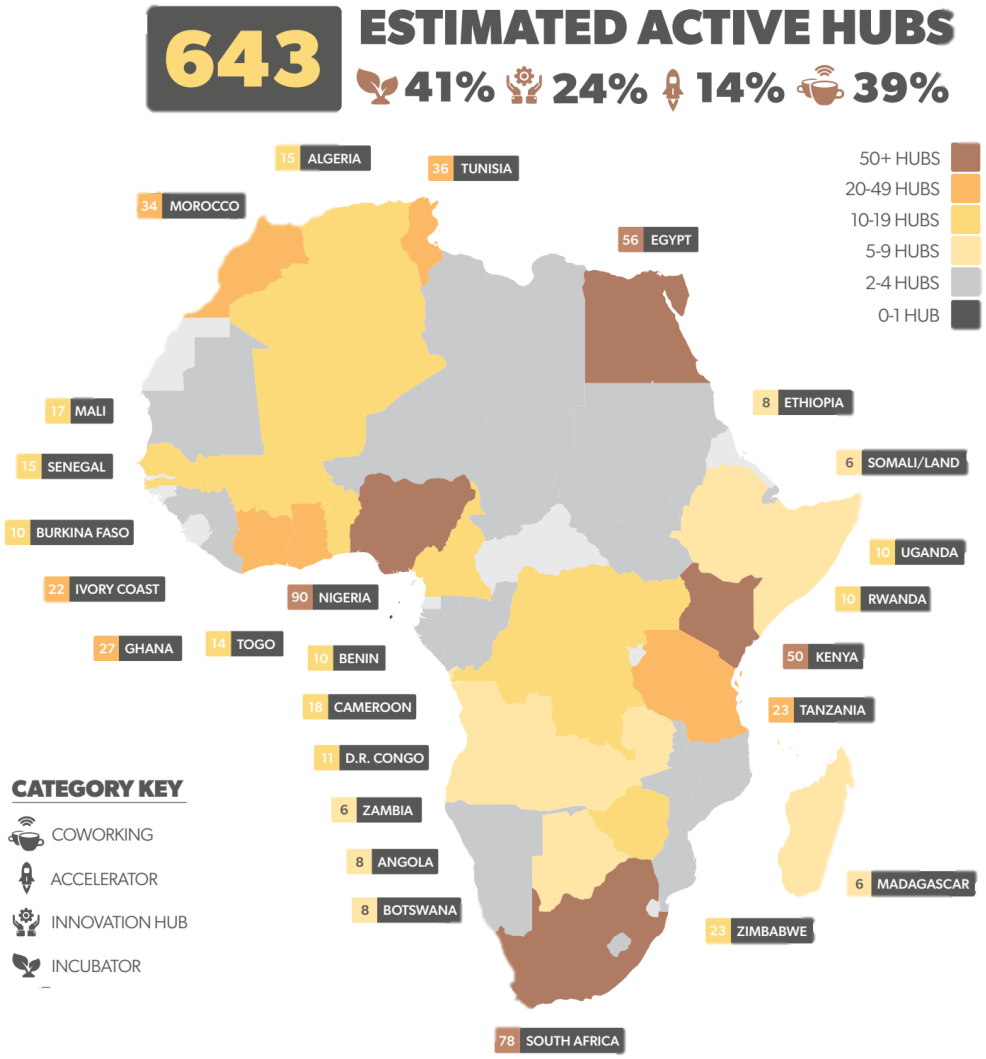
Why Ag-Tech & Innovations are Critical in the Agriculture and Food Landscapes in Africa



Source: Adapted from https://www.accenture.com/_acnmedia/pdf-102/accenture-unlocking-digital-value-south-africas-agriculture.pdf

African Tech Landscape: Pre-COVID-19





Source: Briter Bridges 2019 https://briterbridges.com/briterafrilabs2019/

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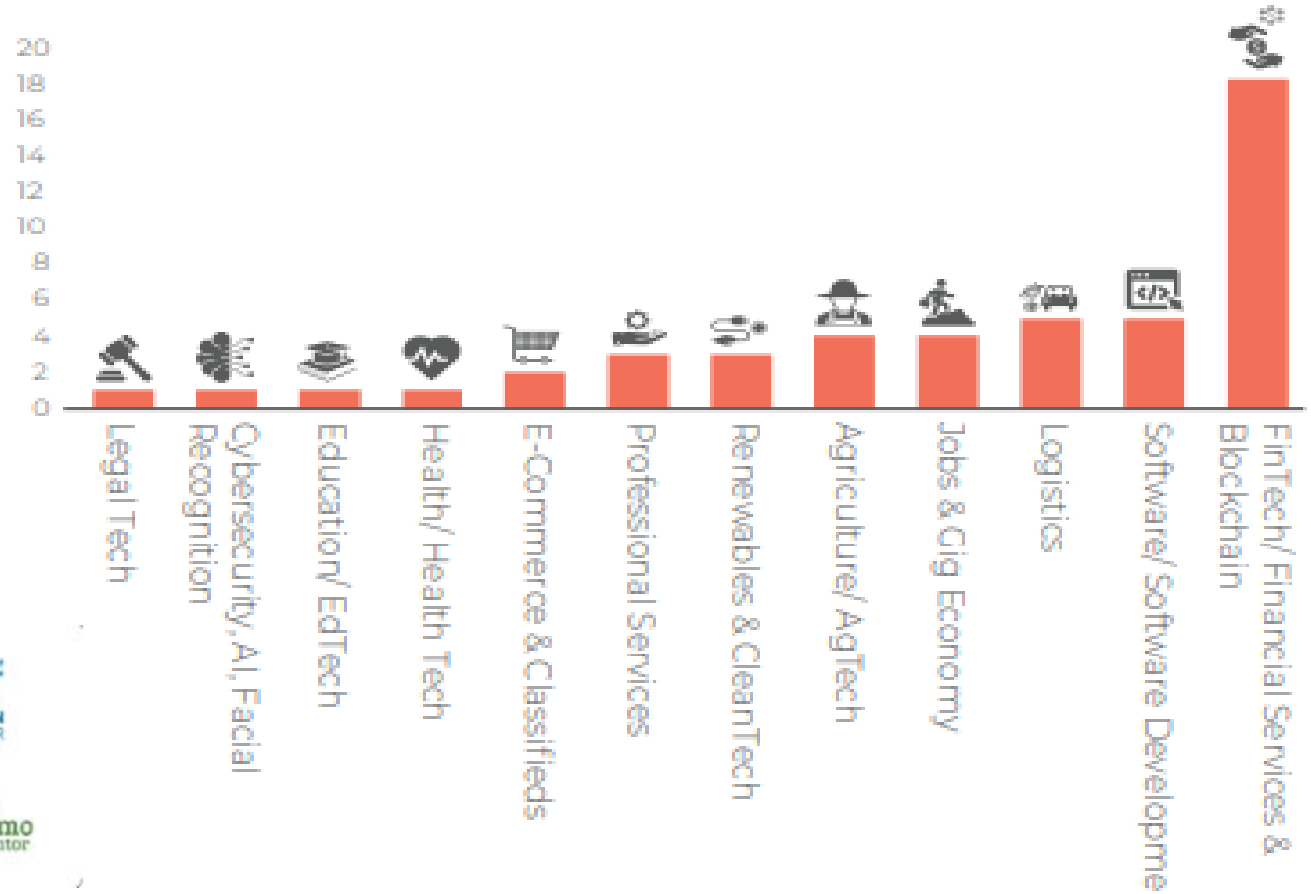
Growing the Ag-Tech Sector

Ag-Tech is a growing landscape but is dominated by fintech startups

Technological innovation in the African agricultural space is driven by:

- **Ag-tech Startups**
- **Private corporations**
- **Research Institutes**
- **International Development Organizations**



Organizations supporting Agtech development

AGRA, CTA, One Acre Fund, AFGRI, GreenTec Capital Partners, IFAD, World Food Programme Innovation Accelerator, CGIAR, FAO, e-agriculture, GSMA mAgri, AgFunder, dwb equity, e-kilimo accelerator

Sources: Briter Bridges Ag-Tech map Q3 2019, Briter Bridges Compensation Study 2019

Digitalization of African Agriculture: Pre-COVID-19

To-date, digitization been centered around providing the following:

Financial inclusion

- Digital smallholder finance (SHF) providers for payments, credit, insurance products
- Crowdfunding platforms
- B2B SHF data analytics intermediaries
- E-banking

Advisory Access

- Agronomic practice and market info services
- Weather surveillance/advisory services
- Precision advisory services at level of farmer or field
- Participatory advisory platforms (e.g., peer to peer)
- Farm management software

Market Linkages

- Digital linkage to agri inputs and/or off-takers
- End-to-end integrated digital market linkage models
- Ag buyer-seller digital marketplaces/exchanges
- Mechanization linkage platforms (e.g., shared economy, PAYG irrigation and machinery access)

Supply Chain Management

- Traceability solutions
- Supply chain management ERP systems
- Logistics management solutions

Macro Agri Sector Intelligence

- Government agriculture sector dashboards
- Agriculture extension system mgmt. tools
- Agribusiness intelligence
- Agronomy / R&D agenda setting tools

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Sources: https://www.cta.int/en/digitalisation-agriculture-Africa, Briter Bridges Ag-Tech map Q3 2019,

Precision Agriculture – Great Potential, but Low Adoption Linked to High Costs

Sensors can provide farmers with real-time information about the state of their crop, livestock, soil or farm machine to drive decision making to optimize production.

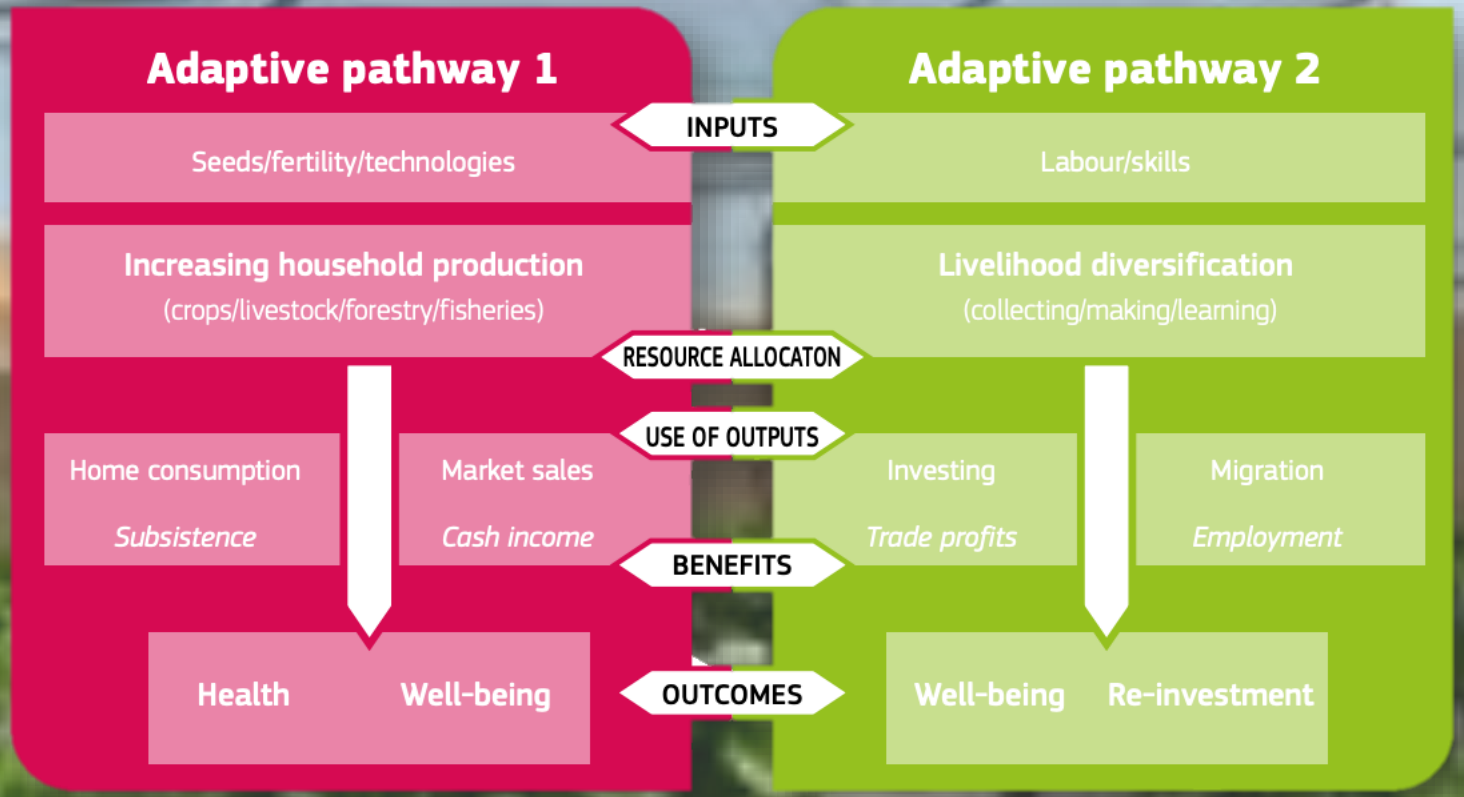
Bioengineering applies the principles of biological and physical sciences to manipulate or impact the genetic traits of a crop to improve its performance and nutritional content

Mobile Applications encompass solutions that leverage mobile infrastructure to meet farmers' information needs, build their capacity and increase their access to finance and to markets.

Automated Technologies include drones, unmanned aerial vehicles (UAVs), robots and artificial intelligence (AI) used to perform agricultural processes accurately and with limited involvement of humans

Innovation is enabling Climate Adaptation

Despite having the lowest level of emissions of any continent, Africa has 7 out of the 10 countries most at risk due to climate change, so it is important to have climate resilient solutions.



Egyptian hydrofarms

Hydroponics farm in the Egyptian desert producing pesticide free vegetables

Start-ups like **Tele-Irrigation** offer automated, electronic irrigation systems.

ENTOMILK™
The Original Insect Milk

EntoMillk is made from Black Soldier Fly larvae and is more water and energy efficient to produce than any of its dairy or dairy alternative counterparts.

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COVID-19: Emerging Trends in Technology Use

Agricultural drone sales have skyrocketed in China to address labour constraints and to reduce human contact The Ministry of Agriculture declared that 30,000 drones are to be launched this Spring.

According to the US Chamber of Commerce, consumer spending on groceries is up **87.4%** with grocery delivery apps seeing on average a **150%** increase in daily downloads.

Sources: https://www.devex.com/news/sponsored/opinion-how-to-address-the-impact-of-covid-19-on-global-food-systems-96892, https://www.uschamber.com/co/good-company/launch-pad/coronavirus-pandemic-food-delivery-businesses

Mitigating the impact of COVID-19

- Big data platforms that can obtain and monitor detailed information about agricultural products across the country will improve the anti-risk capability of traditional agricultural product supply chains and increase circulation efficiency
- Digital agriculture solutions linking farmers to buyers and logistics services could help reduce the impact of control measures related to COVID-19 on aggregators and supply chains.
- Shared mechanization services, can mitigate reductions in cropped areas caused by labour shortages while increasing per-hectare productivity.
- Local manufacturing and processing may replace global supply chains. Small-scale, local manufacturers may be empowered by the proliferation of technologies such as 3-D printing

Key Questions for Consideration

- **Question 1:** How can agribusinesses leverage innovation and technology to sustain/revive their operations during the COVID-19 pandemic?

- **Question 2:** How can key stakeholders leverage innovation and technology to ensure that farmers, smallholder producers, and vulnerable populations in urban and rural areas are not left behind during their crisis?

- **Question 3:** What can the government, civil society and international development community do to accelerate the use of technology and innovation within their own operations and to foster usage in the agribusiness landscape now and beyond COVID-19?

THANK YOU

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